(1) At page 8, line 6; please change the text within the parenthesis to read (~ 200 nm, also deposited obliquely).

(2) At page 12, line 12; please replace [fo] with of.

(3) At page 12, line 29, please change "**17A**" to **17 (A to D)**.

(4) At page 13, lines 20-27; The term "alkyl" is used herein to refer to a branched or unbranched, saturated or unsaturated, [monovalent] hydrocarbon radical having from 1-30 carbons and preferably, from 4-20 carbons and more preferably from 6-18 carbons. When the alkyl group has from 1-6 carbon atoms, it is referred to as a "lower alkyl." Suitable alkyl radicals include, for example, structures containing one or more methylene, methine and/or methyne groups. Branched structures have a branching motif similar to i-propyl, t-butyl, i-butyl, 2-ethylpropyl, *etc.* As used herein, the term encompasses "substituted alkyls."

A2

(5) At page 14, lines 10-12; The term "arylalkyl" is used herein to refer to a subset of "aryl" in which the aryl group is [attached to the nucleus] linked to or integrated into R^1 or R^2 shown in Formulae 1 - 4 by an alkyl group as defined herein.

A3

(6) At page 14, lines 20-22; "Substituted arylalkyl" defines a subset of "substituted aryl" wherein the substituted aryl group is [attached to the nucleus] linked to or integrated into R^1 or R^2 shown in Formulae 1 - 4 by an alkyl group as defined herein.

A4

(7) At page 15, lines 6-9; As used herein, the term "acylamino" describes [substituents] functional groups of the general formula RC(O)NR', wherein R' is a lower alkyl group and R represents a component of either R^1 or R^2 [the nucleus] shown in Formulae 1 - 4 or an alkyl group, as defined herein, attached to either R^1 or R^2 [the nucleus].

A5

(8) At page 15, line 20-25; The term "acyloxy" is used herein to describe an organic radical derived from an organic acid by the removal of the acidic hydrogen. Simple acyloxy groups include, for example, acetoxy, and higher

A6

homologues derived from carboxylic acids such as ethanoic, propanoic, butanoic, *etc.* The acyloxy moiety may be oriented as either a forward or reverse ester (*i.e.* RC(O)OR' or R'OC(O)R, respectively), and may be integral to R^1 or R^2 or a substituent of R^1 or R^2, wherein R comprises a [the] portion of the ester [attached either directly or through an intermediate hydrocarbon chain to the nucleus] derived from R^1 or R^2 shown in Formulae 1 - 4.

(9) At page 15, lines 17-21; As used herein, the term "aryloxy" denotes aromatic groups which are linked to [the nucleus] R^1 or R^2 or are a constituent of R^1 or R^2 shown in Formulae 1 - 4, directly through an oxygen atom. This term encompasses "substituted aryloxy" moieties in which the aromatic group is substituted as described above for "substituted aryl."

(10) At page 15, lines 21-25; As used herein "aryloxyalkyl" defines aromatic groups attached, through an oxygen atom to an alkyl group, as defined herein. The alkyl group is [attached to the nucleus] linked to or integrated into R^1 or R^2 as shown in Formulae 1 - 4 by an alkyl group as defined herein shown in Formula 1 - 4. The term "aryloxyalkyl" encompasses "substituted aryloxyalkyl" moieties in which the aromatic group is substituted as described for "substituted aryl."

(11) At page 16, lines 1-4; The term "unsaturated cyclic hydrocarbon" is used to describe a [monovalent] non-aromatic group with at least one double bond, such as cyclopentene, cyclohexene, *etc.* and substituted analogues thereof. These cyclic hydrocarbons can be single- or multi-ring structures.

(12) At page 16, lines 15-17; "Heteroarylalkyl" defines a subset of "heteroaryl" wherein an alkyl group, as defined herein, links the heteroaryl group or integrates it into [to the nucleus] R^1 or R^2 shown in Formulae 1 - 4.

(13) At page 16, lines 25-27; "Substituted heteroarylalkyl" refers to a subset of "substituted heteroaryl" as described above in which an alkyl group, as defined herein, links the heteroaryl group or integrates it into [to the nucleus] R^1 or R^2 shown in Formulae 1 - 4.

(14) At page 16, lines 28-32; The term "heterocyclic" is used herein to describe a [monovalent] saturated or unsaturated non-aromatic group having a single ring or multiple condensed rings from 1-12 carbon atoms and from 1-4 heteroatoms selected from nitrogen, sulfur or oxygen within the ring. Such heterocycles are, for example, tetrahydrofuran, morpholine, piperidine, pyrrolidine, *etc.*

A12

(15) At page 17, lines 5-7; The term "heterocyclicalkyl" defines a subset of "heterocyclic" wherein an alkyl group, as defined herein, links the heterocyclic group or integrates it into [to the nucleus] R^1 or R^2 shown in Formulae 1 - 4.

A13

(16) At page 10, please delete lines 8-15, inserting therefor the following.

--Fig. **5A** is an optical image of LC sandwiched between two gold films, one supporting a SAM formed from $C_{15}SH$ and the other patterned with a mixed SAM formed from C_8SH and BiSH and a SAM formed from $C_{16}SH$. The uniformly twisted LC is viewed through parallel polarizers, wherein the patterned SAM does not include bound avidin:

A14

Fig. **5B** is an optical image of the LC of Fig. **5A**, wherein the patterned SAM includes bound avidin;

Fig. **5C** is an optical image (parallel polarizers) of LC sandwiched between two gold films, one supporting a SAM formed from $C_{15}SH$ and the other supporting a grating-like pattern of SAMs formed from $C_{16}SH$ and a mixture of C_8SH and BiSH without bound avidin;

Fig **5D** is an optical image (parallel polarizers) of the LC of Fig **5C** with bound avidin.--

(17) At page 10, line 17, delete "(C)" and "(D)" replacing them with --Fig. **5C**-- and --Fig. **5D**--, respectively.

(18) At page 12, delete lines 15-17, inserting therefor the following.

--Fig. **15** displays schematic illustrations of optical cells with patterned lower surfaces. The deformation of the LC within each cell results from patterned anchoring of the LC on the surface of the cells:

Fig. **15A** is an optical cell in which the bottom surface has a pattern of odd- and even-numbered carbon atom SAM components, and the top surface consists of odd-numbered carbon atom SAM components;

Fig **15B** is an optical cell in which the bottom surface is a mixed pattern of long and short SAM components (perpendicular to bottom surface) and either odd-numbered and even-numbered carbon atom SAM components (not perpendicular to bottom surface), and the top surface is mixture of long and short SAM components;

Fig. **15C** is an optical cell in which the bottom surface is a pattern of odd-numbered and even-numbered carbon atom SAM components, and the top surface is a mixture of long and short SAM components.--

(19) At page 12, delete line 29, inserting therefor the following.

--Fig. **17** displays optical images of LC diffraction gratings:

Fig. **17A** is an optical image of a diffraction grating of Fig. **15A**;

Fig **17B** is an optical image of the diffraction grating of Fig. **15A** diffracting laser light;

Fig. **17C** is an optical image of the diffraction grating of Fig. **15B**;

Fig. **17D** is an optical image of the diffraction grating of Fig. **15C**.--

(20) At page 12, delete lines 30-32, inserting therefor the following.

--Fig. **18** displays optical images of the diffraction grating of Fig. **15B** and **15C**, when illuminated with light polarized along either the x or y direction:

Fig. **18A** is an optical image of the grating of Fig. **15B** viewed with light having polarization along the x direction;

Fig. **18B** is an optical image of the grating of **15B** viewed with light having polarization along the y direction;

Fig. **18C** is an optical image of the grating of Fig. **15C** viewed with light having polarization along the x direction;

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Fig. **18D** is an optical image of the grating of Fig. **15C** viewed with light having polarization along the y direction;

Fig. **18E** is a graphical illustration of the reorientation of the mesogens with an applied electric field.--

(21) At page 13, delete lines 1-2 inserting therefor the following.

--Fig **19A** is an optical image of a patterned mesogenic layer.

Fig. **19B** is an optical image of a patterned mesogenic layer on a non-planar substrate.--

IN THE CLAIMS:

Cancel claims 1-65 and 90-108.

Amend claims 70 and 71.

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70. (Amended) The device according to claim **67**, wherein said analyte is a nucleic acid and said interaction is a hydrogen bonding interaction between said nucleic acid and a nucleic acid strand having an at least partially complementary sequence.

71. (Amended) The device according to claim **[70] 67**, wherein said interaction is between a protein and a small molecule.

Add new claims 109-113.

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--**109.** (New) A device comprising:

a first substrate having a surface;

a second substrate having a surface, said first substrate and said second substrate being aligned such that said surface of said first substrate opposes said surface of said second substrate;